

A

<b>Notice of Allowability</b>	Application No.	Applicant(s)
	10/604,371	MCKIVERGAN ET AL.
	Examiner Minh D A	Art Unit 2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 7/15/03.
2.  The allowed claim(s) is/are 1-12.
3.  The drawings filed on 15 July 2003 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
 of the:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

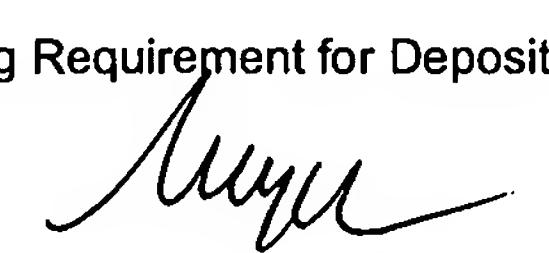
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_.
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

  
TUYET VO  
PRIMARY EXAMINER

**EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Deleted abstract on 7/15/03 and added new abstract as bellows:

**Abstract**

A low-profile, tri-filar, helix antenna having circular polarization (CP) includes a single feed, in the absence of an internal feed net-work. The antenna includes three metal, bent, quarter-wave monopoles that are physically positioned at 0, 120, and 240 degrees, respectively, on a top flat surface of the antenna. One of the monopoles is directly fed, and the other two monopoles are monopoles are parasitically coupled to the directly fed monopole. Metal perturbations on one or both of the two parasitic monopoles control their coupling-phase to the directly fed monopole. One of the parasitic monopoles couples at positive 120 degrees to the directly fed monopole, and the other parasitic monopole couples at negative 120 degrees to the directly fed monopole.

**Remarks**

2. The changes above have been provided to improve the clarification of the abstract language and avoid exceeding 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

***Allowable Subject Matter***

3. Claims 1-12 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art does not teach that, the steps of: providing perturbation-means on at least one of said second and third monopole elements', and controlling said perturbation-means on said at least one of said second and third monopoles in a manner to produce a plus 120 degree coupling of said second monopole element to said first monopole element, and in a manner to produce a minus 120 degree coupling of said third monopole element to said first monopole element in combination with all limitations recited in independent claims 1 and 8.

The prior art does not teach that, shifting a resonant frequency of at least one of said second and third monopole elements in a manner such that one of said second and third monopole elements couples to said directly-fed monopole element at positive 120 degree and such that another of said second and third monopole elements couples to said directly-fed monopole element at negative 120 degrees in combination with all limitations recited in independent claim 11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Koyanagi (US 6,697,025) and Okabe et al. (US 6,639,559) are cited to show an antenna device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Minh A whose telephone number is (571) 272-1817. The examiner can normally be reached on M-F (5:30 –2:30 PM).

If attempts to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and (703) 872-9319 for final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (571) 272-1553.

Examiner

Minh A

Art unit 2821

8/09/04